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ABSTRACT

The mobile laboratory is a self-contained van with the equipment and production facilities necessary to provide a wide variety of instructional media for classroom use. The van brings in-service training in the production and use of audiovisual equipment to staff members in the "target area" schools of Minneapolis, Minn. During 1970-71, all teachers new to these schools received up to a half-day of instruction while reserve teachers taught their classes. A total of 410 classroom teachers and 105 aides from 21 elementary, four secondary, and three nonpublic schools were trained. Instruction was also provided at 18 faculty meetings, two all-day faculty workshops, and 11 audiovisual service days. Teachers appeared most interested in developing materials of immediate value in their classrooms. A list of equipment in the laboratory is appended. See also EM 010 414. (Author/JK)

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Minneapolis Public Schools

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Audio Visual Mobile Instructional Laboratory Project Director's Report 1970-71

Mark Goodman, Media Specialist

A Title I, ESEA Project

Ideas expressed in this report do not necessarily reflect the official position of the Minneapolis Public School Administration nor the Minneapolis School Board

EM 010 413

November 1971

Research and Evaluation Department
Educational Services Division
807 N. E. Broadway
Minneapolis, Minnesota 55413

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Minneapolis Public Schools

Audio Visual Mobile
Instructional Laboratory
1970-71

Summary

The mobile laboratory is a self-contained van with the equipment and production facilities necessary to provide a wide variety of instructional media for classroom use.

The van brings in-service training in the use of audio visual equipment and in the productions of audio visual materials to staff members in Minneapolis Target Area schools.

During 1970-71 all teachers new to Target Area schools received up to a half-day of instruction while reserve teachers taught their classes. A total of 410 classroom teachers and 105 aides from 21 elementary, four secondary and three nonpublic schools were trained. Instruction also was provided at 18 faculty meetings, two all-day faculty workshops and 11 Audio Visual Service Days.

The media specialist who directs the project reported that this year teachers seemed to be most interested in developing materials of immediate value in their classrooms.

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About this report . . . . . .

All evaluation reports prepared by the Research and Evaluation Department of the Minneapolis Public Schools follow the procedures and format described in Preparing Evaluation Reports, A Guide for Authors, U. S. Department of Health, Education and Welfare.

Readers who are familiar with these Evaluation Reports may wish to skip the first two sections describing the City of Minneapolis and the Minneapolis Public Schools since these descriptions are standard for all reports.

The City of Minneapolis

The program described in this report was conducted in the Minneapolis Public Schools. Minneapolis is a city of 434,400 people located on the Mississippi River in the southeastern part of Minnesota. With its somewhat smaller twin city, St. Paul, it is the center of a seven county metropolitan area of over 1,874,000, the largest population center between Chicago and the Pacific Coast. As such it serves as the hub for the entire Upper Midwest region of the country.

The city, and its surrounding area, long has been noted for the high quality of its labor force. The unemployment rate in Minneapolis is lower than in other major cities, possibly due to the variety and density of industry in the city as well as to the high level capability of its work force. The unemployment rate in May of 1971 was 4.7%, compared with a 6.2% national rate for the same month. As the economic center of a prosperous region rich in such natural resources as forests, minerals, water power and productive agricultural land, Minneapolis attracts commerce and workers from throughout the Upper Midwest region. Many residents are drawn from the neighboring states of Iowa, Wisconsin, Nebraska and the Dakotas as well as from the farming areas and the Iron Range region of outstate Minnesota.

More Minneapolitans--three out of 10--work in clerical and sales jobs than in any other occupation, reflecting the city's position as a major wholesale-retail center and a center for banking, finance and insurance. Almost as many (27%) are employed as craftsmen, foremen and operatives, and one out of five members of the work force are professionals, technicians, managers, and officials. Fewer than one out of five (17%) workers are employed in laboring and service occupations.

Minneapolis city government is the council-dominated type. Its mayor, elected for a two year term, has limited powers. Its elected city council operates by committee and engages in administrative as well as legislative action.

Minneapolis is not a crowded city. While increasing industrial development has occupied more and more land, the city's population has declined steadily from a peak of 522,000 in 1950. The city limits have not been changed since 1927. Most homes are sturdy, single family dwellings built to withstand severe winters. Row homes are practically nonexistant even in low income areas. In 1970, 48% of the housing units in Minneapolis were owner-occupied.

Most Minneapolitans are native born Americans, but about 35,000 (7%) are foreign born. Swedes, Norwegians, Germans, and Canadians comprise most of the foreign born population.

Relatively few nonwhite citizens live in Minneapolis although their numbers are increasing. In 1960 only three percent of the population was nonwhite. The 1970 census figures indicate that the nonwhite population has more than doubled (6.4%) in the intervening 10 years. About 70% of the nonwhites are Black. Most of the remaining nonwhite population is American Indian, mainly Chippewa and Sioux. Only a small number of residents from Spanish-speaking or Oriental origins live in the city. In 1970 nonwhite residents made up 6.4% of the city's population but accounted for 15% of the children in the city's elementary schools.

Minneapolis has not yet reached the stage of many other large cities in terms of the level of social problems. It has been relatively untouched by racial disorders or by student unrest. Crime rates are below national averages. Continuing concern over law and order, however, is still evidenced

by the election in 1969 and the re-election in June 1971 of Mayor Charles Stenvig, a former police detective.

One's first impression is that Minneapolis doesn't really have serious problems of blight and decay. But the signs of trouble are evident to one who looks beyond the parks and lakes and tree-lined streets. As with many other large cities, the problems are focused in the core city and are related to increasing concentrations there of the poor, many of them nonwhites, and of the elderly. For example, nine out of 10 Blacks in Minneapolis live in just one-tenth of the city's area. While Minneapolis contains 11.4% of the state's population, it supports 27% of the state's AFDC families. In addition, more than one out of every four school children in Minneapolis now is living in a low income (Title I criteria) home.

There has been a steady migration to the city by American Indians from the reservations and by poor whites from the small towns and rural areas of Minnesota. They come to the "promised land" of Minneapolis looking for a job and a better way of life. Some make it; many do not. In 1967 the city supported one out of 10 of the state's American Indians who were on relief; in 1969 the city supported three out of 10. The American Indian population is generally confined to the same small geographic areas where the Blacks live. Estimates of the Indian unemployment rate vary, but range as high as 60%. These same areas of the city have the lowest median incomes in the city and the highest concentrations of dilapidated housing, welfare cases, and juvenile delinquency.

The elderly also are concentrated in the central city. In 1970, 15% of its population was over age 65. The elderly, like the 18 to 24 year old young adults, live near the central city because of the availability

of less expensive housing in multiple-unit dwellings. Younger families have continued to migrate toward the outer edges of the city and surrounding suburban areas.

The Minneapolis Schools

About 78,700 children go to school in Minneapolis. Most of them, about 64,200, attend one of the city's 99 public schools; 14,500 attend parochial or private schools.

The Minneapolis Public Schools, headed by Dr. John B. Davis, Jr., who became Superintendent in 1967, consists of 69 elementary schools (kindergarten-6th grade), 15 junior high schools (grades 7-9), nine high schools (grades 10-12), two junior-senior high schools, and five special schools. Over 3,700 certificated personnel are employed.

Control of the public school system ultimately rests with the seven-member School Board. These nonsalaried officials are elected by popular vote for staggered six year terms. The Superintendent serves as the Board's executive officer and professional adviser, and is selected by the Board.

The system's annual operating general fund budget in 1971 was $72,784,887 up from $62,385,985 in 1970 and $56,081,514 in 1969. Per pupil costs were $715 in 1970. The range of per pupil costs in the state for 1970 was from $387.00 to $908.00. The range of per pupil expenditures for school districts in the seven-county metropolitan area was $536 to $820 with a mean expenditure of $645.[1] Almost 40 cents of each local property tax dollar goes for school district levies. The School Board is

[1] Per pupil cost is the adjusted maintenance cost from state and local funds and old federal programs, exclusive of transportation, per pupil unit in average daily attendance for the 1968-69 school year. Source of these figures is Minnesota Education Association Circular 7071-C2 Basic Financial Data of Minnesota Public School Districts, February, 1971.

a separate governmental agency which levies its own taxes and sells its own bonds. Minneapolis also received federal funds totaling 4.2 million dollars in 1970-71 from many different federal aid programs. The Elementary and Secondary Education Act provided about 2.9 million dollars of which 2.5 million dollars was from Title I funds.

One of the Superintendent's goals has been to achieve greater communication among the system's schools through decentralization. Consequently two "pyramids" or groups of geographically related schools have been formed. First to be formed, in 1967, was the North Pyramid, consisting of North High School and the elementary and junior high schools which feed into it. In 1969 the South-Central Pyramid was formed around South and Central High Schools. Each pyramid has an area assistant superintendent as well as advisory groups of principals, teachers, and parents. The goals of the pyramid structure are to effect greater communication among schools and between schools and the community, to develop collaborative and cooperative programs, and to share particular facilities and competencies of teachers.

In 1970-71 there were 22 elementary schools, four junior hig[illegible] three senior highs, and five parochial schools serving children in areas eligible for programs funded under Title I of the Elementary and Secondary Education Act (ESEA). The federal criteria for selecting these schools are based on economic factors, in particular the number of families receiving AFDC or having incomes under $2,000. About 20,000 children attend these public and parochial schools. Of that number, about one-third of the children have nonwhite backgrounds, and one-third are defined by the State Department of Education as educationally disadvantaged, i.e. one

or more grade levels behind in basic skills such as reading and arithmetic. Federal programs are concentrated on the educationally disadvantaged group.

Based on sight counts on October 20, 1970 the percentage of Black pupils for the school district was 9.9%. Six years before the proportion was 5.4%. American Indian children currently comprise 3.7% of the school population, more than double the proportion of six years ago. The proportion of minority children in the various elementary schools generally reflects the prevailing housing pattern found in each school area. Although some nonwhite pupils are enrolled in every elementary school, nonwhite pupils are concentrated in two relatively small areas of the city. Of the 69 elementary schools, 11 have more than 30% nonwhite enrollment and five of these have over 50%. There are no all-black or all-white schools. Thirty-three elementary schools have nonwhite enrollments of less than 5%.

The proportion of school age children in AFDC homes has almost doubled from approximately 12% in 1962 to 23% in 1971.

Turnover rate is the percent of students that come in new to the school or leave the school at some time during the school year (using the September enrollment as a base figure). While the median turnover rate for all the city schools in 1969-70 was about 22%, this figure varied widely according to location. Target Area schools generally experienced a much higher turnover rate; in fact only two of the Target Area schools had turnover rates less than the city median. Compared with the city, the median for the Target Area schools was almost twice as large (41%).

Minneapolis Public Schools

Audio Visual Mobile Instructional Laboratory
1970-71

The Project Schools

The schools involved were designated "Target Area" schools based on the percentage (50% or more) of children from economically deprived homes. Because of their limited environmental opportunities for developing cognitive and affective learning skills, special attention must be devoted to the widespread use of meaningful instructional technology. Most of the children in these schools suffer a combination of learning handicaps which require innovative uses of a variety of audio visual materials and specialized instructional techniques to help them progress at a near normal rate. Because of the continuing problems in Target Area schools such as high mobility of both students and staff, racial mix, and marginal incomes, the audio visual instruction program must continuously provide in-service training to the staff of Target Area schools.

Historical Background

The Mobile Audio Visual Instructional Laboratory Project has been in operation for the past five years. It began in the summer of 1966, using building locations for a series of workshops. In September of 1967 the equipment and materials were installed in a twenty-two foot mobile van which brings in-service training to each building in the project. The project was originally initiated to provide audio visual instruction for teachers who had access to considerable quantities of new equipment and materials with which they were unfamiliar. Target Area faculties in small groups learned production and utilization techniques. A major change in the past three years of the project substantially increased teacher participation in the project by providing reserve teacher service (two per day) to release teachers from

classroom duty for instruction in the laboratory. This type of in-service training is unique to Target Area schools. Thus, teachers of the disadvantaged are given an instructional advantage in both the amount and variety of audio visual equipment available and materials necessary to provide more meaningful and vitalized learning experiences.

During the year 1970-71, there was an increased emphasis on providing a substantial number of teacher aides with in-depth training in operating audio visual equipment and producing visuals and audio or video tape materials. Also, the media specialist devoted considerably more time to large group demonstrations as part of a released time staff development program.

The Objectives of the Program

1. To assist teachers in developing audio visual media materials designed to more effectively communicate with the child confined by his environment to a largely nonverbal world.
2. To decrease teacher reliance on verbal forms of communication.
3. To provide media and methods for individualizing student instruction.
4. To evaluate and select the most effective and efficient communication media to achieve defined instructional objectives.
5. To develop skills in producing audio visual materials.
6. To become comfortable and proficient in operating audio visual equipment.
7. To provide time, undistracted by classroom duties, to create innovative instructional programs designed to captivate interest, expand the environment of experience, and develop cognitive skill.

8. To provide consultative services for the development and implementation of systems of learning.

All teachers new to Target Area schools received up to three hours of instruction in the mobile laboratory. Experienced teachers participated in the program on their own request. There was sufficient time to provide service to every teacher who requested it. Following is a tabulation of Target Area schools and staff involved in the project:

	Schools	Teaching staff	Aides	
Elementary	21	315	-	
Secondary	4	65	-	
Non-public	3	30	-	
Totals	28	410	105	(information not available on assignments of aides)

Staff hours of training:

Teachers--1200

Aides--1655

Faculty meetings--18

Faculty workshops--2 (6-8 hours)

Audio Visual Service Days--11

Personnel

One media specialist is responsible for organizing the instruction and directing the program. He is employed full time for 42 weeks of the school year. He has a Masters degree in Curriculum and Instructional with a major in Audio Visual, and has taught at the secondary level for 20 years. Two reserve teachers per day are requested by building principals, and are not

under the control of the media specialist, but they are considered as part of the project staff.

Planning and Training

The original project proposal was written by Mr. E. Dudley Parsons, Consultant in Audio Visual Education, Minneapolis School District #1. The program of instruction was written by the media specialist presently conducting the program, under the direction of the Consultant. The program is continually revised as new technology and materials are developed and made available to teachers.

Project Operations

The project has been renewed annually since its inception in 1966. This report covers the 1970-71 school year from September through June. The media specialist maintains an office in the Audio Visual Laboratory located in the Minneapolis Schools Administration Building located at 807 Broadway North East. The program of instruction is conducted in the mobile laboratory which may be located at the building requesting the service.

The mobile laboratory is contained in a large van with inside dimensions of 22 feet long by 8 feet wide and 7 feet high. Power is supplied by a 7½ kilowatt gasoline powered generator which provides ample power to operate all equipment and maintain comfortable temperature in all seasons. It is equipped with all types of audio visual equipment common to the schools being serviced. Included in the van are all types of production materials and files of instructional materials of value to teachers. The media specialist

advises the teachers concerning the most effective media and methods available to achieve their specific instructional objectives and provides instruction in operating the necessary equipment or producing appropriate materials.

On a typical day, the mobile laboratory arrives at the school requesting service by 8:30 in the morning. Two teachers, released from classroom duties for one-half day by reserve teachers requested by the principal, come into the van for individually prescribed instruction. Usually they will have specific instructional objectives in mind as a result of having received descriptive literature concerning the program and production facilities available. There is no formalized course of instruction, but generally some time is spent initially on introducing the teacher to innovative techniques of media utilization and the operation of common equipment. Teachers seem to be most interested in developing materials of immediate value in their classrooms. Accordingly, a major portion of time is devoted to instruction in the production of instructional materials. The instruction is repeated in the afternoons with two other teachers similarly released from their classrooms. Teacher aide training is conducted afternoons or evenings or during school vacation time. Courses involve 30 hours of laboratory time.

Budget

The annual budget of $29,073.00 was provided by P.L. 89-10, Title I, ESEA funds, covering a fiscal year from August 16, 1970 to July 30, 1971. The media specialist in charge of the program was solely responsible for the expenditure of the funds. Following is a breakdown of budget item expenditures:

		Percent
Salaries (Including reserve teacher time)	$23,370.00	87.0
9% Fringe on salaries	2,103.00	
Supplies (Adequate instructional materials)	3,000.00	9.7
Maintenance of the audio visual van	600.00	3.3
Totals	$29,073.00	100.0%

The per teacher cost of this project is $59.14, determined by dividing the total operating budget by the total number of teachers or other instructional personnel who participated in the project. These expenditures are almost totally operational costs, since the "start up" costs were expended when the program was initiated in 1966.

The budget was adequate to provide all requirements of services and materials.

Results of the Project

The project continues to meet with enthusiastic response from participating teachers. Most responses are informal or verbal statements made by teachers who express their appreciation for the "lift" the program gives them by providing them with basic instruction in the utilization of instructional media and materials necessary to implement their programs of instruction. In addition, evaluation forms were given to some teachers on a spot-check basis. These give a more objective analysis of instructional values of the project. In some cases, the media specialist visited the classrooms of teacher participants subsequent to instruction in the mobile laboratory. In every case, there was evidence of more enthusiastic participation on the part of students in the learning process through the more extensive use of instructional media, and it must follow, more efficient and effective learning

Dissemination and Communications

Publicity about the Audio Visual Mobile Van Project has been distributed widely and in various forms:

1. 16mm film, "Your Schools in Action," Minneapolis Public Schools, 1967. Contains a segment on the resources and operation of the mobile laboratory.
2. "The Audio Visual Van," a flyer published by the Minneapolis Public Schools in 1968 for general distribution to inform the general public and for information to be given to visitors to Minneapolis Schools.
3. "Federal Programs in the Minneapolis Public Schools," 1969. A booklet published by the Federal Projects Office for general distribution.
4. "The Audio Visual Van," Audio Visual Journal, University of Minnesota, General Extension Division, Department of Audio Visual Education, Volume 4:1, January, 1970. State-wide distribution, and by exchange to other university audio visual departments.
5. Goodman, Mark E., "The Audio Visual Mobile Laboratory--In Service Training at the Teacher's Door," Minnesota Journal of Education, March, 1970, P. 40. State-wide distribution to members of the Minnesota Education Association.
6. End of year reports.
7. Slide-tape presentation of the Mobile Laboratory Project.

From time to time slides and black and white prints have been made showing the mobile laboratory in operation. These are available for teacher orientation programs as well as to the general public on request.

The mobile laboratory has been displayed at meetings of the Minnesota Audio Visual Coordinators Association where upwards of 100 people toured the facilities and examined the instructional program. Delegations from out of state school districts as well as from other state districts are occasional visitors to the mobile laboratory. Handout materials are made available to them on request. No records of such visits are maintained.

Recommendations

For the past four years this project has continued to make an impact on the use of instructional media in Target Area schools. Teachers often say it has the most direct influence on the quality of classroom instruction. They voice overwhelming approval of the continuance of the program on much the same basis as in former years.

The impact of the program could be greatly expanded if more schools and faculties could be included, and if a centralized media center could be established as a continuing in-service training facility and materials production center for teachers who need more than the one-half day per year of instruction time in the laboratory.

Appendix A

The Audio Visual Mobile Laboratory

Special School District #1
Audio Visual Education

The Audio Visual Mobile Laboratory
(An ESEA Title I Federal Project for Target Area Schools)

Purpose: To provide instruction in the production and utilization of instructional media for teachers of the educationally disadvantaged.

Participants: All staff members, including teacher aides, who work directly with children in Target Area Schools.

Equipment and Materials Available: The mobile laboratory is a self contained van with equipment and production facilities necessary to provide a wide variety of instructional media for classroom use.

Instruction Equipment
(Self instructing manuals accompany most equipment).

1. Graflex filmstrip projectors
2. Individual viewing filmstrip
3. Remote control slide projector
4. Individual viewing slide projector
5. Tachistoscope
6. Sound filmstrip projectors
7. Opaque projector
8. Overhead projector
9. Bell & Howell 16 mm projector
10. Super 8 mm loop projector
11. Magnetic Sound Super 8 mm projector
12. Radio
13. Record player
14. Listening centers
15. Reel-to-reel tape recorders
16. Cassette tape recorders

Production Equipment

1. Dry mount press
   (Laminating-dry mounting materials of any size).
2. Thermofax copier for:
   Transparencies, Spriit masters
   Single copies, Laminating (8½x11)
3. Dry photo copier
   (Accepts book materials).
4. Diazo transparency maker
   (Produces color transparency sets).
5. Tape recorders with patch cords for transcriptions.
6. Cameras:
   35 mm copy camera
   Super 8 mm motion picture camera
   Poloroid camera
7. Photo copy stand
   (Makes 2x2 slides from pictures).

All materials needed to improve instruction will be furnished without cost. Examples of materials available are:

Flannel materials for making flannel boards.
Flannel board symbols and letters.
Hook 'n Loop display materials.
(May be special ordered).
Magnetic boards and supplies.
Rubber molds and plaster for making
Plaster relief maps.
(North Amer., South Amer., Un. States).
Mounting boards in all colors and weights.
Dry mount tissue
Laminating film
(For 8½x11 the thermofax and the press laminator).

Cloth backing for large charts and maps.
Transparency master copies
(Approximately 200 master sets in all subject areas from K-12 and 30 Diazo transparency master books).
Overhead transparency film
(A wide variety of colors and special purpose films).
A variety of graphics production materials for transparencies or paper copy.

Recorded instructional cassettes to be duplicated from the Clinton cassette library.
Tapes for reel-to-reel tape recorders.
Cassettes for teacher made tapes.
Indian culture materials-slides, tape and color prints.

A limited selection of 8 mm loop films.
Study prints in selected science areas.
Poloroid films.
35 mm film for classroom or copy stand use.
Super 8 mm film for film making projects.

The Mobile Laboratory Program:

_____ The intent of the federal project is to make it possible for every Target Area teacher to become involved in the extensive use of instructional media in every classroom.

_____ Teachers new to Target Area schools will be allowed first preference in scheduling the laboratory. All other teachers will be scheduled at a later time.

_____ All teachers will receive a minimum of ½ day of released time for Audio Visual in-service training.

_____ Each faculty should decide as early as possible the number of staff members who want released time in-service training and the dates preferred. At least four teachers per day are needed to schedule the laboratory.

_____ The principal will arrange the mobile laboratory schedule and call 2 reserve teachers per day. (To release 4 regular teachers for ½ day each).

How to Prepare for the Mobile Laboratory

_____ Decide what unit(s) you want to concentrate on to prepare for the extensive use of the Audio Visual media.

_____ Take time to list specific behavioral objectives for the unit. (What do you want students to do as learning activities in which progress can be measured).

_____ Decide which Audio Visual equipment and materials you intend to use to achieve the objectives. (The media specialist in the mobile laboratory can be most helpful in this area if you have well conceived ideas of what you want to teach).

_____ Decide what equipment you want to learn to operate (both instruction and production equipment).

Special School District #1
Audio Visual Education

Audio Visual Mobile Laboratory
Pre-Registration Information Sheet

Name _____ School _____ Grade _____

Date preferred for the Laboratory _____

Unit(s) for which you want to prepare materials

_____

_____

Materials you may want to use or prepare

_____

_____

Equipment you want to learn to operate

_____ _____

_____ _____

_____ _____

Other requests or information

_____

I would be interested in taking a professional growth course in Audio Visual methods and materials.

Yes _____ 20 hours 1 credit _____
No _____ 40 hours 2 credits _____

Return this form to Mark Goodman, Audio Visual Office, as soon as 4 or more staff members agree on a schedule for the mobile laboratory.